

Symmetry EBM Connect



Health care organizations recognize the need to measure and improve health care quality.

According to a 2019 report from the U.S. Department of Health and Human Services (HHS), access to and quality of health care in America is increasing, but there's ample room for further improvement. There are also racial and ethnic differences in quality of care, with Black, American Indian, Alaskan Native, Hispanic and Native Hawaiian/Pacific Islander people all experiencing worse performance on a significant number of quality measures.¹ Despite recent improvements, gaps continue to exist between best possible care and services routinely delivered.¹¹² The Commonwealth Fund's 2019 national health system report places the United States last overall in life expectancy. But the U.S. is highest in terms of health care spend as a percentage of GDP when comparing 11 high-income countries.² Health information technology provides tremendous opportunities for improvement.²³³.4

High-quality health care at an affordable cost is a priority in the United States. As health care costs approach one-fifth of the U.S. economy, evidence suggests a significant portion of costs do not result in better health.³ There is a well-documented gap between current medical knowledge and actual health care practice.^{5,6,7} Across geographic regions, there is significant variation in the use of medical services. These differences in health care expenditures do not correlate with patient outcomes. Studies have shown that outcomes improve and costs are lower when care is consistent with evidence-based treatments.^{8,9,10,11}



When care is consistent with evidence-based treatments, health outcomes improve and costs are lower.

Historically, quality measurement efforts in the United States faced considerable challenges, including:

- Agreement on standards to measure care
- Determination of valid and available sources of data to support measurement
- Tools that use robust and adaptable measurement criteria to assess compliance

Today, the industry is addressing these challenges head on. Several national organizations have dedicated programs that target quality measure development. These include the American Medical Association Physician Consortium for Performance Improvement (PCPI), Centers for Medicare & Medicaid Services (CMS) and National Committee for Quality Assurance (NCQA). Further, many physician specialty organizations and state programs have focused resources on quality initiatives. Beyond developing and maintaining measures, the National Quality Forum (NQF) plays a significant role defining standards for quality measurement and endorsing actionable measures supported by evidence-based literature.

The information, data sources and technology needed to support measurement have improved. Multiple sources define standards of care and support measure development efforts. These sources include clinical trials, peer-reviewed literature, specialty organization guidelines and specifications from national organizations. Administrative data — medical and pharmacy claims — and laboratory results have increased in both availability and comprehensiveness. This data provides a rich and convenient information source from which organizations can evaluate health care services and outcomes. In addition, sophisticated tools and technology that encode standards of care provide an efficient and robust way to measure compliance and identify potential gaps in care.

Optum® Symmetry® EBM Connect® uses administrative data, laboratory results and non-claims electronic data to measure health care quality. EBM Connect software identifies gaps between clinical evidence and health care practice with applications for a variety of health care organizations. It captures substantial information about quality care measurement and compares actual, observed member care with care supported by sources such as clinical trials and national guidelines.

Organizations use these findings to identify:

- Care opportunities, including "gaps" in care for members and populations
- High-performing physicians as well as those where compliance with prescribed care is low relative to peer comparison groups or national benchmarks
- Unnecessary or potentially harmful diagnostic tests and treatment
- Members with suboptimal disease control or low adherence to prescribed medication regimens
- Potentially harmful drug-to-drug or drug-to-disease interactions



EBM Connect identifies gaps between clinical evidence and health care practice.

EBM Connect software is part of the Symmetry suite of analytic products from Optum. The suite also includes Episode Treatment Groups® (ETG®), Procedure Episode Groups® (PEG®), Episode Risk Groups® (ERG®) and Rx Analytics. These products support a wide array of business needs, leveraging a single methodological platform.

This common platform allows organizations to apply industry-accepted measurement and assessment standards across several dimensions, including cost of care, risk of incurring health care costs and quality of care. When run in conjunction with its companion product, Symmetry ETG, EBM Connect software supports comparisons of quality and cost outcomes for a wide array of clinical conditions.

With more than 600 measures covering many important clinical conditions, EBM Connect provides a solid foundation for quality measurement. Organizations can choose which measures to use depending on their populations of interest and unique quality measurement needs.

The following pages detail EBM Connect and how it develops, maintains, tests and validates measure. The final section describes the types of measures, product transparency, features, outputs and clinical application. We'll also preview an optional product focusing on oncology measures.

EBM Connect

The Symmetry EBM Connect software uses administrative data and laboratory results to identify members with selected clinical conditions or with needs for preventive health care. The software identifies these members using criteria such as gender, age, diagnoses and patient's duration of medical and pharmacy coverage.

Once the appropriate set of members are identified, EBM Connect assesses each one's medical care by applying a series of clinical rule-based measures that define whether the member's care was consistent with clinical guidelines and recommendations. In doing so, the engine uses patient data from a variety of sources: medical and pharmacy claims, as well as non-claims sources such as lab results in the form of LOINC codes and electronic health record (EHR) data.

The EHR data could include traditional claims-based taxonomies such as ICD diagnosis codes and CPT® codes. It can also include data types found only in EHR data, like SNOMED codes, CVX codes and RxNorm codes. The use of multiple sources of data ensures a complete view of the patient, allowing for accurate measurement of the patient's care.



EBM Connect uses administrative data and laboratory results to identify members with selected clinical conditions or with needs for preventive health care.

^{*} CPT® is a registered trademark of the American Medical Association.

EBM Connect: A broad complement of clinical measures

EBM Connect offers different kinds of clinical measures to support several applications. It contains process measures that look at whether optimal care was delivered to individual patients based on their unique health care needs. There are also measures that look at whether patient safety was upheld, either by preventing drug-disease interactions or by ensuring proper laboratory monitoring occurred for patients taking long-term medications.

EBM Connect also provides medication adherence measures to gauge whether patients comply with prescribed medication regimens. There are measures that identify patients who may warrant additional care and outreach due to concerning clinical conditions, such as patients who exhibit poor asthma control.

Lastly, EBM Connect has several measures of low-value care (LVC) that identify services or treatments that result in little to no clinical benefit (or even increased risk to the patients) but that incur health care costs. For additional details on LVC measures in EBM Connect, please refer to the white paper "Addressing low-value care in Optum Symmetry EBM Connect." 18

The EBM Connect measure development and maintenance process

National standard specifications from organizations such as the Pharmacy Quality Alliance, CMS and NCQA HEDIS® are the primary source for many EBM Connect measures, with priority given to any measure endorsed by the National Quality Forum (NQF).

In addition to these national standard measures, the EBM Connect software contains two other types of measures. One is derived from national standards but is enhanced with additional logic for more robust measures. An example is a measure that uses additional data sources (e.g., pharmacy prescriptions) to complement a measure dependent solely on CPT® II or HCPCS codes. The second type consists of quality measures and care opportunities supported by clinical evidence where no national standard exists.

Although the process for measure development and maintenance is similar for all types of measures, there are some important differences.

For national standard measures, or measures based on these standards, Optum obtains specifications and codes from the measure steward. Codes are loaded and validated to confirm proper entry. Many of the national standard measures contained within EBM Connect are sourced from the NCQA HEDIS program.

All HEDIS measures have undergone a certification process offered by NCQA, called Allowable Adjustment certification. This certification permits flexibility to alter some measure components (like requirements around line of business), while requiring that the clinical aspects of the measures (code sets, numerators, medications) adhere to the specifications set forth by NCQA.

While these certified, unaudited measures are not intended to be used for official HEDIS health plan reporting, they serve several other important functions. They can be used to:

- · Track trends in compliance with health care guidelines
- Estimate future measure counts and compliance prospectively
- Gauge gaps in care
- Troubleshoot suboptimal results through use of EBM Connect audit files

For non-national standard measures, including national standards for which the logic or coding is enhanced, there's a clinical measure development process. It begins with a comprehensive review of existing literature. This might include guidelines from specialty and professional organizations and clearinghouses, published clinical trials and other relevant articles and pharmaceutical manufacturers' recommendations.

The EBM Connect team identifies potential measures, including code sets where needed, based on the supporting literature and the ability to adequately assess care using available data.

This process also involves an EBM Connect clinical expert panel that reviews and discusses the most current treatment guidelines and proposed measures. The expert panel includes physicians, advanced degree pharmacologists, coding experts and analysts with quality measurement expertise.

The physician experts for each clinical condition are board-certified in their primary subspecialty and are currently practicing, most with more than 20 years of clinical experience. They work in a variety of health care settings including federal- and state-government-funded facilities, academic centers and private practice.

After measure logic and code sets are defined, an analyst builds the measures and creates user documentation. To ensure accuracy, another analyst peer reviews the work. The entire EBM Connect team, including a medical director, conducts a final review to confirm the logic matches the intent of the clinical expert panel.

EBM Connect testing and validation

All measures undergo a testing and validation process. The first stage of testing involves a small dataset designed specifically for the demographic and diagnostic criteria of the measures. This allows the team to confirm the logic works correctly.

During the second stage of testing, measures are run through a larger dataset containing claims from approximately one million members. This testing verifies the measure logic functions properly with a larger, more representative data set, and that results align with national rates and benchmarks, when that data is available, and are clinically reasonable.



All measures undergo a testing and validation process and are reviewed every 12–60 months.

The third stage of testing results in national benchmarks using a geographically diverse population with no less than 12 million commercial members. An EBM Connect medical director reviews all results during every phase of testing and national benchmark results are reviewed with EBM Connect clinical expert panel members.

For non-national standard measures, a clinician on the team creates a synopsis that summarizes the evidence for the measure. The synopsis provides rationale for the measurement criteria, citations for supporting research and guidelines, and any available strength of evidence ratings. The logic and detailed sets of diagnosis, procedure, pharmacy, laboratory and other codes used to construct the measures within EBM Connect are similarly transparent.

After measures are added to the product, they undergo maintenance on a regular basis. Measures authored by Optum are reviewed every 12–60 months. This includes ensuring the measures reflect current literature and guidelines and reviewing measures with the expert panel.

For national standard measures, the EBM Connect team reviews any specification update to see if the measures warrant changes. If changes are made to the measures, the testing process previously outlined is repeated.

Clinical measures and application

EBM Connect measures have been developed for clinical conditions (cases) that represent chronic diseases, new diagnoses, acute or self-limited medical conditions or prevention screening.

EBM Connect logic defines specific inclusion criteria and benefit coverage requirements for each clinical condition. In particular, the member must:

- · Meet appropriate age and gender criteria
- Have defined medical and, if necessary, pharmacy benefit coverage
- Where applicable, have confirmation of the relevant medical condition during the specified time period

Equally important is use of exclusion criteria, where appropriate, to avoid measuring members with certain contraindications or comorbidities.

EBM Connect software applies intervention measures for a given clinical condition to all members of the population who meet these criteria. For some members, measures are identified as "not applicable" if further measure-specific criteria are not met.

EBM Connect includes three broad types of conditions — chronic, acute/ episodic and preventive. Examples in the following sections demonstrate the process and logic for each.



EBM Connect logic identifies the set of members that qualify for measurement.

Chronic conditions

For each chronic condition, EBM Connect logic uses member age, gender, eligibility, condition confirmation criteria and exclusion criteria (if applicable) to identify the set of members to be measured. EBM Connect software identifies members for a chronic condition based on information from claims data, including the diagnoses assigned and services provided. Although most EBM Connect chronic conditions identify members with a specific diagnosis (e.g., coronary artery disease, diabetes, depression), a diagnosis is not required for some conditions (e.g., identifying high-risk medications used in the elderly).

Capturing all relevant indicators is essential, as the greater the number of relevant indicators, the more reliable the confirmation of the condition and assessment of appropriate care.¹³ In addition, for members identified through a disease or care management program, users can submit this information through a Disease Registry Input File.

Once EBM Connect logic identifies the appropriate set of members, compliance is assessed for every measure within each given condition. A "result flag" is generated for each measure by applying available member data to the logic that defines each measure. There are numerous possible results for each clinical measure, as outlined in Table 1. This information is used to determine measure compliance. In some cases, there is insufficient information to assess measure compliance (e.g., absence of pharmacy coverage). In these situations, EBM Connect output notes this result and the specific data limitation.

Table 1: Measure compliance

Result flag value	Description
Yes	The answer to the clinical question is yes.
No	The answer to the clinical question is no.
NRX	Indicates that the member did not have any pharmacy benefit during the reporting period. The NRX value is only applicable to certain measures that are pharmacy dependent.
Q	Indicates that the member has no claim record for the particular test or treatment during the time window of the measure, but the member did not have coverage throughout the time window or there was insufficient time range of input claims data, and hence, there may be data incompleteness. The Q value is applied only for certain measures and certain setup configurations.
NA1	Member did not meet the age or gender criteria.
NA2	Member was not currently taking the medication in question or had not taken it for the required duration.
NA3	Member was taking the medication, but a possession ratio could not be computed [less than two prescriptions during the measure time window].
NA4	Member did not meet the measure specific criteria [e.g., comorbidity, complexity (diagnosis and medication), intervention not warranted].
NA5	No lab result record or insufficient information.
NA6	Member admitted to a hospital or long-term care facility, which might cause data incompleteness.
NA7	Member who did not receive treatment or medication had a contraindication or other justification.

Acute/episodic conditions

The second type of condition — acute or episodic — typically represents medical diagnoses or interventions that are new, self-limited or reflect an acute exacerbation of a chronic condition. Unlike a "chronic condition," the logic used to define an acute/episodic condition is anchored around a point in time (e.g., date of a procedure or diagnosis). EBM Connect software can identify single or multiple acute/episodic conditions, depending on the intent of the measure.

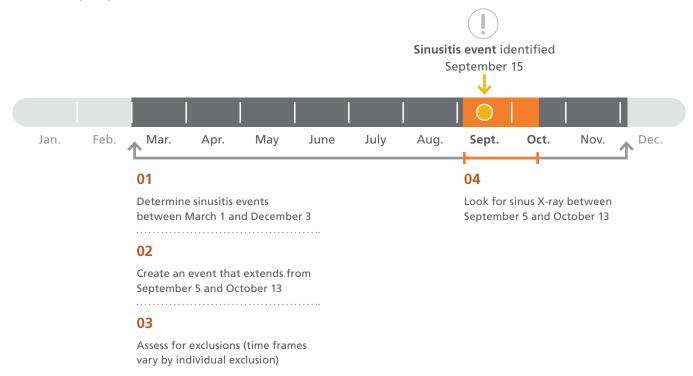
One example is a measure that evaluates care associated with one or more episodes of acute sinusitis. The measure determines whether a member had an unnecessary X-ray of the sinuses in the same time period as an acute sinusitis diagnosis. This imaging is not recommended for uncomplicated sinusitis, as it results in costs with no clinical benefit to the member and exposes the member to radiation.

Figure 1 illustrates the steps that identify an episode of acute sinusitis. The EBM Connect software locates a sinusitis claim dated September 15 and applies subsequent measure logic. Just as EBM Connect does with chronic conditions, the EBM Connect logic assesses inclusion and exclusion criteria based on a user-defined "report period end date," which is used to define the claims processing window.

In this example, the common report period end date is December 31. The review of claims for acute sinusitis begins 28 days earlier since the measure logic requires an evaluation of all claims 28 days after the acute sinusitis episode begins.

Figure 1. Identification of acute sinusitis episodes

12-month report period with user-defined end date of Dec. 31, 20XX



Members with exclusion criteria, suggesting more complex cases or complications related to the sinusitis episode (e.g., claims for organ transplant, recent inpatient stays or cystic fibrosis), are removed from the acute sinusitis case. Since sinusitis can be a chronic problem, EBM Connect looks for evidence of chronic issues in the 24 months prior to the report period end date and removes the member if that evidence exists. Final logic is applied to determine measure compliance — the event is assessed for the presence of a sinus X-ray during a time period anchored by the diagnosis of acute sinusitis.

The acute sinusitis measure set will identify multiple discrete episodes of sinusitis and evaluate each separately. For other conditions, EBM will apply logic to identify a single event of the condition uncomplicated by previous episodes of the condition.

Preventive conditions

Preventive conditions include screening for disease and immunizations. EBM Connect software uses different member selection criteria for preventive conditions than for chronic or acute/episodic conditions in that it includes all members meeting demographic criteria, not only those with claims, in the analysis.

For example, the HEDIS breast-cancer screening condition identifies a screening mammogram among women of a specific age group. EBM Connect logic identifies females within a specific age range and searches for a breast-cancer screening diagnosis or procedure during the prior 27 months. Exclusion criteria remove members for whom screening is unnecessary (e.g., bilateral mastectomy).

Application and use of measures

Output from EBM Connect software can support analysis at a payer, physician or member level. Reports of measure compliance can identify gaps in care, care opportunities and changes associated with specific interventions. Measurement is a key step to focus resources and drive quality improvement efforts. EBM Connect provides the critical information needed to support a variety of measurement programs.

At the payer level, reports identify the best opportunities for quality and cost improvement by highlighting areas of lowest measure compliance. Specific reports:

- Provide the prevalence of disease among the plan membership
- Reveal opportunities for intervention by identifying the rate of missed opportunities for care — or insufficient compliance with care — for each medical condition



EBM Connect:

- Helps health care organizations identify high-quality physicians
- Helps physicians gather information on their performance
- Identifies patients with gaps in care or new medical problems

Health care organizations are continually challenged to identify ways to improve the quality of care delivered by physicians to members and populations. Evidence suggests that, on average, it takes 17 years for physicians to implement clinical research results in daily practice. Payers who wish to improve compliance with evidence-based medicine require innovative ways to identify physicians who are not yet implementing — or not yet aware of — clinical developments.

Physicians desire information about their quality measure performance and efficient identification of their patients with gaps in care or new medical problems. Results from EBM Connect software provide a powerful foundation to support these needs.

At the member level, EBM Connect can help case managers identify care opportunities, detect low medication adherence and provide invaluable insight for member education. EBM Connect output indicates compliance or noncompliance with a clinical measure by a specific member with a specific condition.

The EBM Connect software offers configuration options to override default coverage requirements. This feature can be used to increase the number of members identified with a condition. The software provides information to indicate when an apparent gap in a member's care could be the result of insufficient coverage during the measurement period.

Although the EBM Connect software is typically used to evaluate care provided in the past (retrospective measurement), customers can perform prospective measurement. With prospective measurement, the software is run with a customer-identified end date that is in the future, or beyond the last date of the input claims. EBM Connect logic modifies member eligibility for prospective measurement when appropriate to check that members have adequate eligibility during the prospective period. This allows customers to predict potential gaps in care as of the prospective end date.

Customers can choose to run EBM Connect software in the traditional retrospective fashion only, prospective only, or both. As with the retrospective approach, customers can select which conditions, or cases, to run prospectively. Prospective measurement can be a powerful tool to identify members who could benefit from outreach, whether for care management or efforts to improve HEDIS reporting scores.

Typically, clients use measure noncompliance to guide outreach to members who have gaps in care. However, clients may also have interest in compliant members to better understand when the services were last received. To this end, EBM Connect provides an output file, the Date of Last Service file, that provides the date a member last received a recommended service. These services align with many EBM Connect measures that evaluate if recommended care is given.



The Date of Last Service file can be used to individualize member notifications to remind members when services are next due.

Organizations can use information from the Date of Last Service file to individualize member notifications and remind members when services are next due. This file can support health plan, provider group and care management programs designed to maximize quality reporting for national measure programs such as Medicare Stars.

Physician attribution

Often, it is important to assign a responsible physician(s) to a specific member when using data to examine care outcomes or find areas for improvement. The EBM Connect software identifies key data associated with member care, allowing customers to apply physician attribution algorithms tailored to their needs. Table 2 summarizes the EBM Connect methods implemented to support this objective. The output generated by these methods is not strictly limited to physicians but can include other health professionals such as nurse practitioners and physician assistants.

Table 2: Supporting physician attribution components

Component	General
Primary care provider (medical and gynecologic)	A progressive multistep process that identifies the physician or other health care provider who is serving as the primary care provider for a member. Medical imputation logic is applied to all members; gynecologic imputation is also performed for female members 12 years of age and older.
Treating physician attribution	A process that identifies all physicians involved in the care of a member's confirmed condition, as evidenced by a relevant diagnosis or procedure. Key data is computed for each treating physician, including number of visits, first and last visit date, and sum of visit costs. Treating physician identification is not performed for member preventive screenings
	and select chronic and episodic conditions.
Physician visits	Logic that identifies for each member all physician visits in the 12 months preceding the report period end date. "Visits" include doctor office visits; evaluation and management (E&M) visits that occur in nursing homes, rest homes and other facilities; visits to outpatient facilities such as free-standing clinics and urgent care; and home visits. Key data is computed for each identified physician, including number of visits, first and last visit date and sum of visit costs.
	Physician visit logic is executed for all members regardless of enrollment and condition criteria.

EBM Connect output

EBM Connect provides insight into members' disease states, treatment intensity and adherence to treatment guidelines through various outputs. Users can link the output using common variables to produce data that meet their individual interests and requirements.

Primary EBM Connect output includes essential information about members' compliance with treatment guidelines. Other output enables the user to drill down to the claims-level data, supporting the ability to audit results and understand findings.

Summary statistics report the prevalence of patients identified with a particular condition and the observed compliance rate for each condition and measure.

EBM Connect: Expanded offerings for oncology measures

EBM Connect now offers an optional product that includes measures around the quality of cancer care, both for specific cancers as well as measures that pertain to a broader population of cancer patients. If you're interested in more in-depth information about this offering, please see the Optum Symmetry EBM Connect Oncology white paper.¹⁵

Summary

Concerns about health care quality, safety and cost drive the need to measure, compare and improve health care performance. Research continues to point to major gaps between current medical knowledge and actual health care practice. Meanwhile, the U.S. health care system is the most expensive in the world, while it continues to underperform in many areas compared to other countries. A tremendous opportunity exists to improve clinical outcomes, decrease health care costs and positively impact member health and quality of life by improving compliance with evidence-based medicine and other standards.

Valid and actionable approaches to measurement are critical to improve health care. Health care organizations can only make progress where they identify improvement opportunities, develop interventions to target those opportunities and gauge success using accurate metrics. EBM Connect software supports this process by efficiently using health care data to assess compliance to a robust set of quality measures.

The EBM Connect product combines measures based on extensive clinical review and research findings with national standard measures to offer a flexible, comprehensive information platform for health care quality measurement. Results can identify key insights into performance and identify specific quality improvement opportunities at the member, physician and population level. Complete transparency around the methods and evidence basis for each measure promotes understanding by all stakeholders and actionable steps for improvement.



Additional outputs address aspects of health status or patient care, such as:

- An unduplicated list of each member's clinical conditions
- A list of all physicians who participated in the care of each member (by condition)
- A list of all members identified as having each EBM Connect condition

Contact us to review the list of clinical measure sets that EBM Connect contains or to learn more about Optum Symmetry EBM Connect.

Email: empower@optum.com

Phone: 1-800-765-6807

- National Healthcare Quality and Disparities Report Introduction and Methods. Rockville, MD: Agency for Healthcare Research and Quality; December 2020. AHRQ Publication No.20(21)-0045-EF.
- 2. Tikkanen R, Abrams MK. U.S. Health Care from a Global Perspective, 2019: Higher Spending, Worse Outcomes? 2019 Update. New York: The Commonwealth Fund, January 2020.
- President's Council of Advisors on Science and Technology. Report to the President Better Health
 Care and Lower Costs: Accelerating Improvements Through Systems Engineering. The White House,
 May 2014.
- Virga PH, Jin B, Thomas J, Virodov S. Electronic health information technology as a tool for improving quality of care and health outcomes for HIV/AIDS patients. Int J Med Inform. 2012;81(10):e39–e45.
- Crossing the Quality Chasm: A New Health System for the 21st Century. Institute of Medicine, Committee on Quality of Health Care in America. Academy Press. 2001.
- Institute of Medicine Committee on Quality of Health Care in America. To Err Is Human: Building a Safer Health System. The National Academies Press. 1999.
- Levine DM, Linder JA, Landon BE. The Quality of Outpatient Care Delivered to Adults in the United States, 2002 to 2013. JAMA Intern Med. 2016;176(12):1778–1790.
- IMS Institute for Healthcare Informatics. <u>Avoidable costs in US health care</u>. 2013. Accessed June 16, 2021.
- 9. Osterberg L, Blaschke T. Adherence to medication. N Engl J Med. 2005;353:487-97.
- 10. Murad, MH. Clinical Practice Guidelines: A Primer on Development and Dissemination. Mayo Clinical Proceedings. 2017;92(3):423–433
- 11. Roebuck MC, Liberman JN, Gemmill-Toyama M, Brennan TA. Medication adherence leads to lower health care use and costs despite increased drug spending. Health Aff. 2011;30(1):91–99.
- 12. Examples of these organizations include the National Committee for Quality Assurance, American Medical Association, Centers for Medicare & Medicaid Services, and commercial and academic entities
- Kerr EA, Hofer TP, Hayward RA, Adams JL, Hogan MM, McGlynn EA, Asch SM. Quality by Any Other Name?: A Comparison of Three Profiling Systems for Assessing Health Quality. Health Services Research. 2007 Oct;42(5):2070–87.
- Balas EA, Boren SA. Managing Clinical Knowledge for Health Care Improvement. Yearbook of Medical Informatics 2000: Patient-centered Systems. Stuttgart, Germany: Schattauer, 2000:65–70.
- 15. Optum. Symmetry EBM Connect Oncology.
- 16. Optum. Addressing low-value care in Optum Symmetry EBM Connect.



11000 Optum Circle, Eden Prairie, MN 55344

Optum is a registered trademark of Optum, Inc. in the U.S. and other jurisdictions. All other brand or product names are the property of their respective owners. Because we are continuously improving our products and services, Optum reserves the right to change specifications without prior notice. Optum is an equal opportunity employer.